

REMARKS

Claim Amendments

Claims 40, 43, 46, 50, 51, 53, 60, and 62 are amended. Claims 1-39, 42, 45, 48, 49, 52, 54-56 are canceled without prejudice or disclaimer. New claims 63-81 are added. Support for the claim amendments and new claims can be found throughout the specification and in the claims as originally filed, and can be found, for example, in the specification at [0149]-[0153], [0200]-[0269], and Examples 5-8. Applicant respectfully requests entry of this amendment and submits that the claim amendments and new claims do not constitute new matter.

Allowable Subject Matter

Applicant appreciates the Office Action's indication that claims 53, 57-59, and 61 are allowable. Claims 40, 43, and 46 have been presented as independent claims. As such, Applicants believe these claims are now allowable pursuant to the Examiner's suggestion (Office Action at page 10, item 12). Claims 50 and 51 have been amended to depend from claims 40, 43, and 46. Applicant respectfully requests rejoinder and allowance of claims 50 and 51 pursuant to In re Ochiai, 71 F.3d 1565, 37 U.S.P.Q.2d 1127 (Fed. Cir. 1995).

Claim Objections

Claims 40, 41, 43, 44, 46, and 47 were objected to because they depended on rejected claims. Applicant has amended claims 40, 43, and 46 rendering this objection *moot*.

Written Description Rejection under 35 U.S.C. § 112, 1st Paragraph

Claims 39, 42, 45, 60, and 62 were rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed had possession of the claimed invention.

Applicant has cancelled claims 39, 42, and 45. Applicant has also amended claims 60 and 62 to recite "an identity of at least 99%" and "an identity of at least 95%," respectively. Accordingly, this rejection is *moot*.

Enablement Rejection under 35 U.S.C. § 112, 1st Paragraph

Claims 39, 42, and 45 were rejected under 35 U.S.C. § 112, first paragraph, because the specification, while being enabled for an interferon- $\alpha 5$ variant of up to 95% sequence identity, with substitutions such as C122S of SEQ ID NO: 2 of the wild type protein which has antiviral activity, does not reasonably provide enablement for all variants of interferon- $\alpha 5$ (up to 90%) contemplated and which have anti-viral or anti-tumoral activities.

Applicant has cancelled claims 39, 42, and 45 rendering this rejection *moot*.

Claim 49 was rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement.

Applicant has cancelled claim 49 rendering this rejection *moot*.

Claim 50 was rejected under 35 U.S.C. § 112, first paragraph, because the specification, while being enabled for treating antiviral activity against vesicular stomatis virus (VSV) in vitro, Encephalomyocarditis virus (EMCV) in vivo (mouse model), and anti-tumoral activity against Friend erythroleukemia cells (FLC) injected mice, does not reasonably provide enablement for the treatment or prevention of cancers, tumors, and immunological diseases.

Applicant has amended claim 50 to recite specific cancers and tumors consistent with the enablement provided in the specification.

IFN α is used for treatment of various cancers and tumors such as metastasizing renal carcinomas and tumors that appear following an immune deficiency comprising Kaposi's sarcoma in the case of AIDS. *See e.g.*, paragraphs [0009]-[0010]. As the Office Action recognizes, the specification teaches that polypeptides of the invention also demonstrate anti-proliferative and anti-tumoral activity. *See e.g.*, O.A. at 9; *see also* Examples 6 and 8. Indeed, Example 8, for example, shows an increased survival rate of FLC inoculated mice after treatment with C122S mutated IFN α -5 as compared to treatment with wild-type IFN α -2. In view of these results, it is clear to the skilled artisan that the polypeptides of the invention may be used to treat the same cancers and tumors as IFN α of the prior art.

Applicant respectfully requests reconsideration and withdrawal of this rejection.

CONCLUSION

Applicant respectfully submits that claims are in condition for allowance, and such disposition is earnestly solicited. Should the Examiner believe that any issues remain after consideration of this response, the Examiner encouraged to contact the Applicant's undersigned representative to discuss and resolve such issues.


In the event that a variance exists between the amount tendered and that deemed necessary by the U.S. Patent and Trademark Office to enter and consider this Response or to maintain the present application pending, please credit or charge such variance to the undersigned's **Deposit Account No. 50-0206**.

Respectfully submitted,

HUNTON & WILLIAMS LLP

Dated: February 20, 2007

By:


Robert M. Schulman
Registration No. 31,196

Christopher J. Nichols, Ph.D.
Registration No. 55,984

HUNTON & WILLIAMS LLP
Intellectual Property Department
1900 K Street, N.W., Suite 1200
Washington, DC 20006-1109
(202) 955-1500 (telephone)
(202) 778-2201 (facsimile)

RMS/CJN:cdh